Instructions for Certification Test Development

Forward: The most difficult part of preparing for FFMR test and validation may be determining what test materials are currently available for the system and what you must create. The first step is to review all test materials that are currently active and accurate. Make a list of test materials you have — referential data, execution sequence, test scripts, system flow charts etc.

Instructions:

Framework

Every test requires a test framework. The framework consists of all items necessary before test execution can begin. It includes the functional test architecture, referential data or master files, the test execution sequence, and the system dates for each set of processing etc. Think of it as the required set-up before conducting daily business.

- Start by reviewing, or developing if necessary, flowcharts of the system processes (at about the middle level of detail). You must know where, and how, the major system processes interact.

- Develop an execution sequence that simulates a functionally valid path through your system. This must encompass a sequence of all the processes necessary for FFMR validation, including year-end and rollover processes.

- Determine which system dates will be used and when. For example, you may have to simulate end-of-month processing in order to get to end-of-year. *You may wish to simply adopt and/or adapt the JFMIP processing framework.*

- Determine if all referential/master data is available in the test system. This data is that which would have to be in place before your system could begin to do its daily business.

Use the spreadsheet referenced below to begin building the necessary scripts.

Spreadsheet Column Explanation

The spreadsheet contains DFAS Guide/Blue Book requirements excluding those from the JFMIP Core Requirements document. Test information for the JFMIP core requirements is available elsewhere. Both of these are available on the JFMIP Web-site. A "V" in the DFAS Guide indicates that the requirement is value added and excluded from this spreadsheet.

Column 1: The FFMR Number from the DFAS Guide.

Column 2: This is the FFMR description.

Column 3: Comments concerning the requirement.

Column 4: Scenarios are descriptions of the high level processes that must occur to test a given requirement. Scripts detail the precise instructions necessary to execute the lower level test. You may combine several individual FFMR scenarios to create a higher level scenario that flows down through a process, creating sub-scenarios and testing several requirements as it goes.

Spreadsheet Usage

As noted earlier, if the spreadsheet does not list a FFMR, it is value added or a JFMIP core requirement. JFMIP publishes material for testing their core requirements. The JFMIP material describes the case, data, supporting material, and structure of the test at http://www.jfmip.gov/jfmip/KBReport1.asp?rpt=1&cat=Qualification%20Testing%20Information

- Review the spreadsheet FFMR applicable to your system.

  - Verify the scenario includes all specific steps your system must take. If any specific steps are missing, add them.

  - Map the various pieces, or steps, of the test

scenario to your functional processes (these processes may be executed either via screens or batch processing).

- You can begin creating scripts when you have identified all the test framework pieces, scenarios, sub scenarios and done the mapping to your system processing. The building of the framework, scenarios, scripts and corresponding materials will probably be a repetitive process as you find other items for inclusion.

- For each FFMR test scenario listed, review the scenario to determine each specific piece executable within your system.

  - For example, the scenario for requirement 01.01.02 reads, "*Record, verify and report transactions to demonstrate the system's capability to post to second level general ledger category…"* Consult with your Independent Consulting Firm (ICF) to determine which accounts to demonstrate. The standard is only one validation point in a script so this probably requires multiple scripts. This scenario could have a script for one account that enters and validates the transaction via the database. If the system normally produces the report at that point, it could be included in script one. If not, then you should write another script. The system would execute that script when, in the processing sequence, it would normally produce the report — at end-of-month perhaps.

  - Complete scripts according in the proper format either in Word (see Template) or within Test Director. When all the scripts are complete for your defined scenario then fill in the corresponding Test Scenario documentation.

  - Use your current numbering scheme to identify your test scenarios/scripts/data files. If you do not have a system standard use the DCII standard attached (Appendix A).

- Continue until you have developed all the scripts for every applicable FFMR scenario. <u>Remember to keep scripts to one validation point.</u> This will help to ensure that any metrics obtained have meaning. It will also help to estimate remaining test execution work. For example, if it took three days (twenty fours hours) to execute and validate twenty-five scripts, then, if they are *approximately* the same size, you could reasonably estimate

it would take six more days to execute and validate another fifty. If one script does three things and another does twenty-three things, then counting scripts serves no useful purpose.

- Complete the scenario form listing all the scripts that apply to that scenario. Scenario lengths may vary considerably since some functional processes are short and straightforward, and others are not.

Test Execution

Stand Alone Test

If conducting FFMR testing as a stand-alone test, then you must review everything to ensure that it does not omit any necessary internal or external functionality. It is possible that the FFMR test scenarios will not get a specific system sequentially through all the required processes; you may need to execute tests that do not directly relate to FFMR in order to close the testing loop.

Integrated Test

If conducting FFMR testing as part of some current system test, then you need to incorporate each script into its appropriate place in the test. If a functional test currently exists, which also tests a FFMR through the functional business process, then simply add the FFMR reference to that script. In consultation with the ICF, also insert the data collection points necessary for validation. You will still need to create the scenarios, which validate the full FFMR, with the appropriate script references so the ICF can clearly see what documentation applies to which FFMR.